An Application of Radial Basis Function Neural Network for Short Term Load Forecasting Solution

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This paper proposes an approach to solve short term load forecasting (STLF) problem by using radial basis function neural network (RBFNN). STLF is one of the main issues for power system scheduling since it can help the utility company to manage the generation of power system economically and reliably. For this purpose, electric load forecast needs to be as accurate as possible to meet the utilities' need as well as it also can help to select the proper amount of reserve margin which can contribute to the efficiency improvement of the power supply. However, many factors can influence electric load such as day of the week, month of the year, and etc. which makes a complex process for obtaining accurate forecasting. In this paper, input of RBFNN are the real historical load data collected from local utility in Kuantan, Pahang that utilized together with Malaysia Meteorology Department (MetMalaysia) data such as weather, temperature, dew point and humidity and the output is load forecasting for the given day. The performances of RBFNN are analyzed by investigating the combination of input-output of mentioned data that contribute to the best result. Comparison with artificial neural network (ANN) also given in this paper

Keywords: power management, radial basis function neural network, short term load forecasting